

A-6

AGGREGATE YARD SAMPLES
DEPARTMENT OF PUBLIC WORKS FACILITY
90 ROD HIGHWAY, FAIRFIELD, CT

OSPREY
ENVIRONMENTAL ENGINEERING, LLC
146 East Main Street
Clinton, CT 06413
Phone (860) 669-8651

DRAWN BY: RJG
SCALE: 1"=100'
DATE: 06.13.18
REVISIONS:



OSPREY ENVIRONMENTAL ENGINEERING, LLC.
146 EAST MAIN STREET . CLINTON, CT 06413
PHONE: 860.669.8651

Mr. Scott Bartlett, Superintendent, Director of Public Works Operations
Fairfield Department of Public Works
725 Old Post Road
Fairfield, CT 06824

30 April 2018

Re: Soils Sampling, Grids A1-F1, L1, M1, Topsoil
Aggregate Recycling Yard Berm Project, Fairfield, CT
Collection date: 25 & 27 April 2018

Per your request, samples of soils from the above delineated site grids were collected to determine concentrations of constituents of concern (COCs) related to available environmental and health & safety standards and guidelines. Samples were composited from each grid and from a potential stockpile to be used as topsoil and were collected in new glassware supplied by the laboratory and stored in compliance with standard sample preservation procedures. The composite samples were submitted to Complete Environmental Testing, Inc., a Connecticut Certified Laboratory. Samples were compared to the DEEP Remediation Standards Regulations (RSRs) Direct Exposure Criteria (DEC) for environmental consideration. Samples were analyzed for PCBs, ETPH, arsenic, and lead. The following is a comparison of the results of the analyses to their respective evaluation criteria.

Sample Summary Table

COMPOUND	ETPH	Arsenic	Lead	PCBs
(Residential/Industrial & Commercial) mg/kg	500/2500	10/10	400/1000	1/10
Grid A1	3900	ND<1.1	7	ND<0.11
Grid B1	1700	3.1	25	ND<0.11
Grid C1	4100	2.2	55	ND<0.11
Grid D1	1500	6.3	18	ND<0.11
Grid E1	870	1.5	23	ND<0.11
Grid F1	900	2.6	29	0.29
Grid L1	1300	2.2	25	ND<0.11
Grid M1	940	2.0	53	ND<0.11
Topsoil stockpile	280	4.0	38	ND<0.11

Green is above the Residential DEC *Blue* is above the Residential & Industrial/Commercial DEC

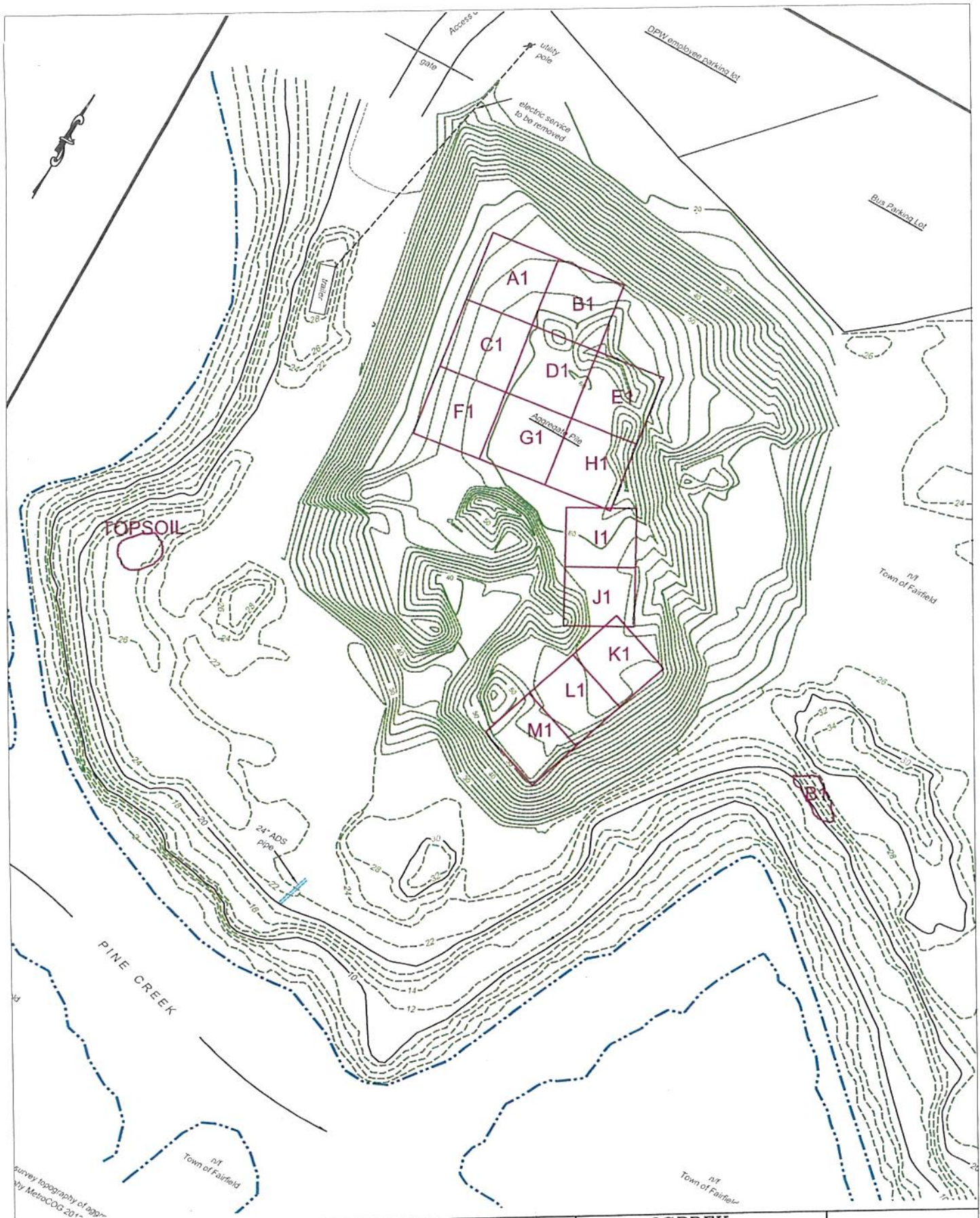
The Grid samples all had ETPH above the Residential DEC most likely due to the presence of asphalt fragments. Some samples had ETPH above the Industrial/Commercial DEC as well, which was expected as they had higher concentrations of asphalt. PCBs, arsenic and lead were all below the Residential and the Industrial/Commercial DEC. All analyses for the potential topsoil stockpile were below the Residential DEC.

Should you have any questions regarding the above, please contact me.

Sincerely,

Osprey Environmental Engineering, LLC.

Robert Grabarek, P.E., L.S., LEP
President



A-3

AGGREGATE YARD SOIL SAMPLES
DEPARTMENT OF PUBLIC WORKS FACILITY
90 ROD HIGHWAY, FAIRFIELD, CT

OSPREY
ENVIRONMENTAL ENGINEERING, LLC
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DRAWN BY: RJG
SCALE: 1"=100'
DATE: 04.23.18
REVISIONS:



OSPREY ENVIRONMENTAL ENGINEERING, LLC.
146 EAST MAIN STREET . CLINTON, CT 06413
PHONE: 860.669.8651

Mr. Scott Bartlett, Superintendent, Director of Public Works Operations
Fairfield Department of Public Works
725 Old Post Road
Fairfield, CT 06824

03 May 2018

Re: Soils Sampling, Grids G1-K1
Aggregate Recycling Yard Berm Project, Fairfield, CT
Collection date: 01 May 2018

Per your request, samples of soils from the above delineated site grids were collected to determine concentrations of constituents of concern (COCs) related to available environmental and health & safety standards and guidelines. Samples were composited from each grid and were collected in new glassware supplied by the laboratory and stored in compliance with standard sample preservation procedures. The composite samples were submitted to Complete Environmental Testing, Inc., a Connecticut Certified Laboratory. Samples were compared to the DEEP Remediation Standards Regulations (RSRs) Direct Exposure Criteria (DEC) for environmental consideration. Samples were analyzed for PCBs, ETPH, arsenic, and lead. The following is a comparison of the results of the analyses to their respective evaluation criteria.

Sample Summary Table

COMPOUND	ETPH	Arsenic	Lead	PCBs
(Residential/Industrial & Commercial) mg/kg	500/2500	10/10	400/1000	1/10
Grid G1	1800	2.9	48	ND<0.12
Grid H1	1900	2.8	30	ND<0.12
Grid I1	1700	3.5	37	0.44
Grid J1	7500	3.3	16	ND<0.12
Grid K1	2600	4.0	63	ND<0.11

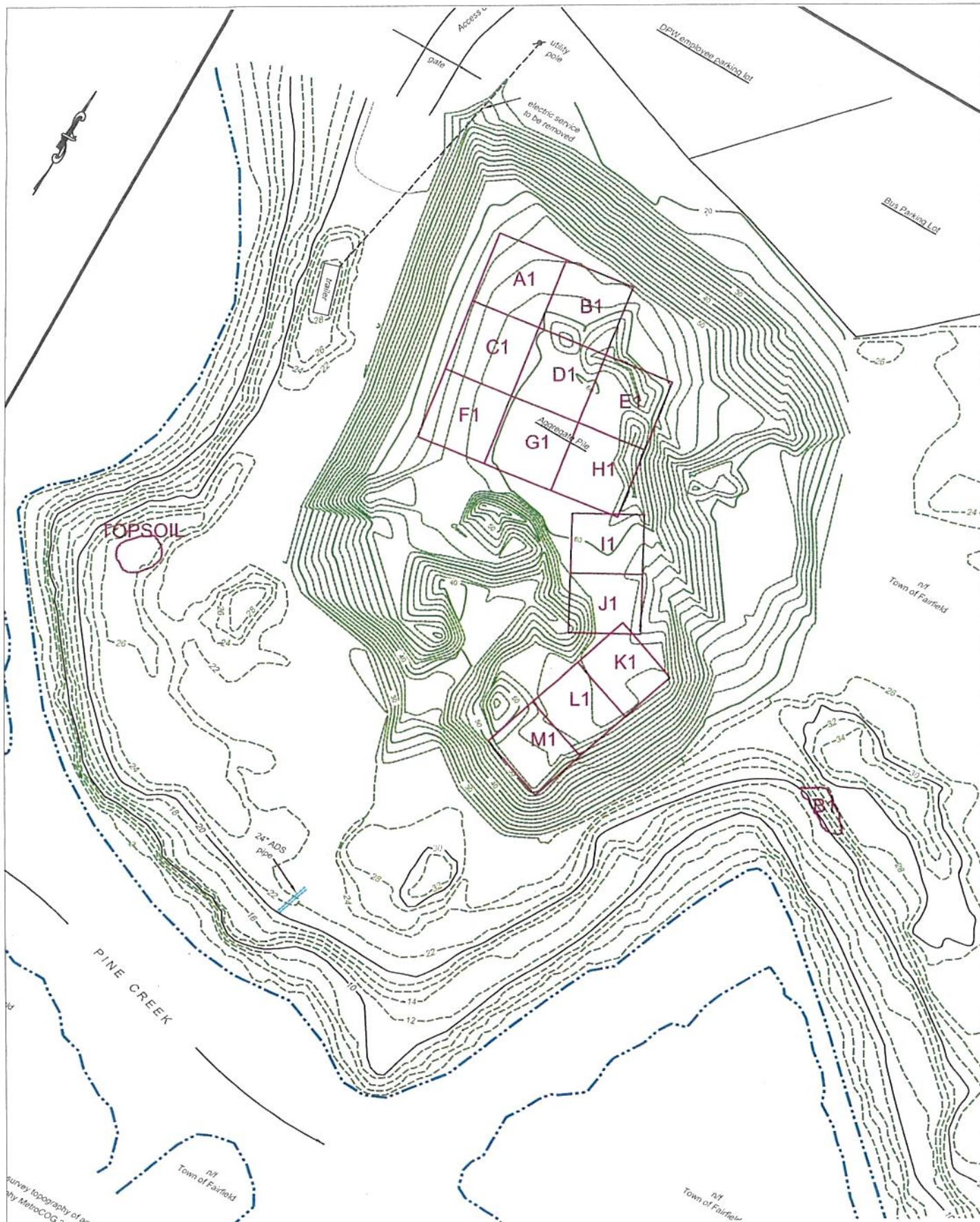
Green is above the Residential DEC *Blue* is above the Residential & Industrial/Commercial DEC

The Grid samples all had ETPH above the Residential DEC most likely due to the presence of asphalt fragments. Some samples had ETPH above the Industrial/Commercial DEC as well, which was expected as they had higher concentrations of asphalt. PCBs, arsenic and lead were all below the Residential and the Industrial/Commercial DEC.

Should you have any questions regarding the above, please contact me.

Sincerely,
Osprey Environmental Engineering, LLC.

Robert Grabarek, P.E., L.S., LEP
President



A-3

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DEPARTMENT OF PUBLIC WORKS FACILITY
90 ROD HIGHWAY, FAIRFIELD, CT

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OSPREY ENVIRONMENTAL ENGINEERING, LLC.

146 EAST MAIN STREET . CLINTON, CT 06413

PHONE: 860.669.8651

Mr. Scott Bartlett, Superintendent, Director of Public Works Operations
Fairfield Department of Public Works
725 Old Post Road
Fairfield, CT 06824

07 May 2018

Re: Soils Sampling, Grids A2-E2
Aggregate Recycling Yard Berm Project, Fairfield, CT
Collection date: 03 May 2018

Per your request, samples of soils from the above delineated site grids were collected to determine concentrations of constituents of concern (COCs) related to available environmental and health & safety standards and guidelines. Samples were composited from each grid and were collected in new glassware supplied by the laboratory and stored in compliance with standard sample preservation procedures. The composite samples were submitted to Complete Environmental Testing, Inc., a Connecticut Certified Laboratory. Samples were compared to the DEEP Remediation Standards Regulations (RSRs) Direct Exposure Criteria (DEC) for environmental consideration. Samples were analyzed for PCBs, ETPH, arsenic, and lead. The following is a comparison of the results of the analyses to their respective evaluation criteria.

Sample Summary Table

COMPOUND	ETPH	Arsenic	Lead	PCBs
(Residential/Industrial & Commercial) mg/kg	500/2500	10/10	400/1000	1/10
Grid A2	9600	ND<1.1	8.6	ND<0.11
Grid B2	2400	3.1	33	0.13
Grid C2	9500	ND<1.1	10	ND<0.11
Grid D2	3100	4.4	20	ND<0.11
Grid E2	7000	ND<1.1	13	ND<0.11

Green is above the Residential DEC *Blue* is above the Residential & Industrial/Commercial DEC

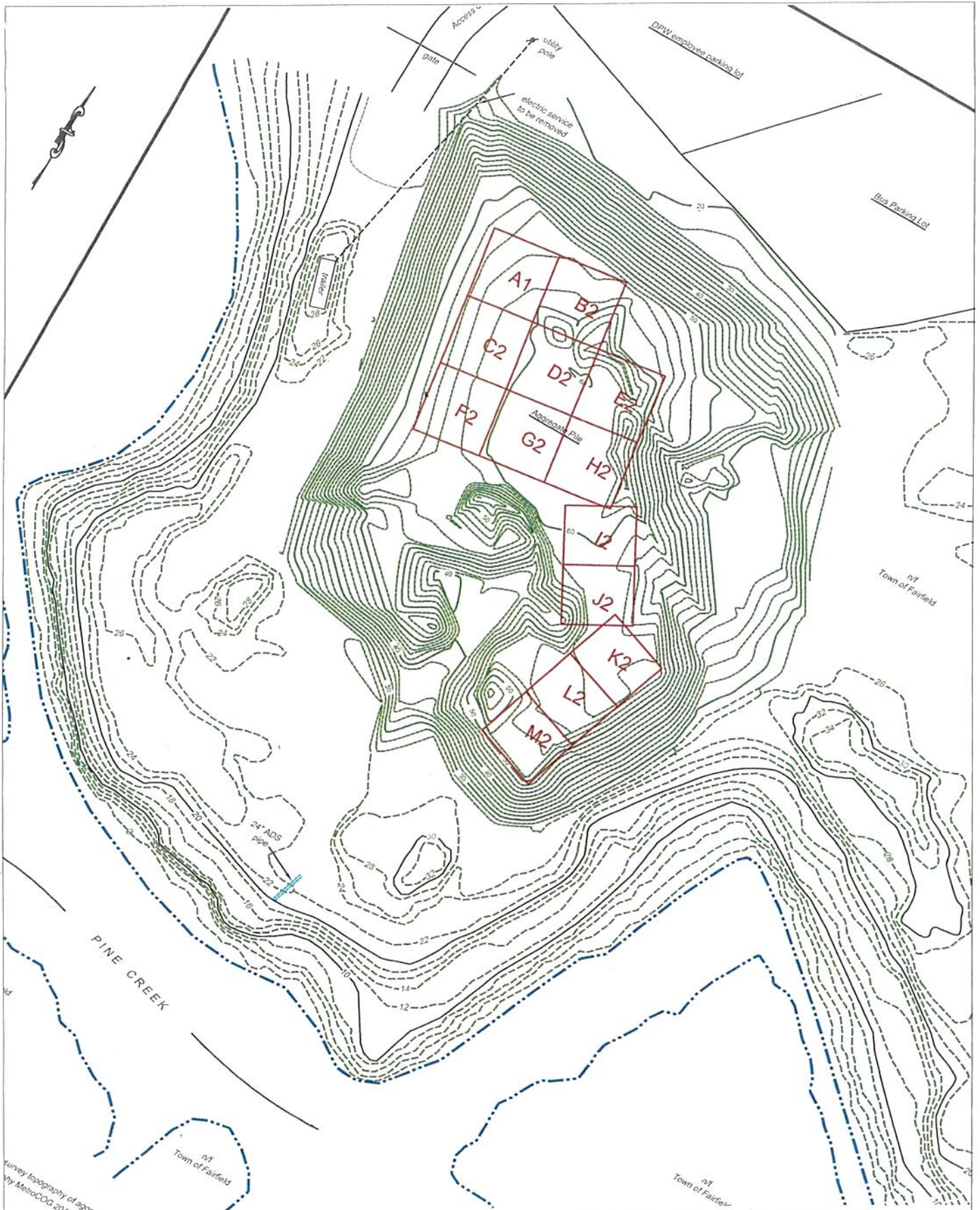
The Grid samples all had ETPH above the Residential DEC most likely due to the presence of asphalt fragments. Some samples had ETPH above the Industrial/Commercial DEC as well, which was expected as they had higher concentrations of asphalt. PCBs, arsenic and lead were all below the Residential and the Industrial/Commercial DEC.

Should you have any questions regarding the above, please contact me.

Sincerely,

Osprey Environmental Engineering, LLC.

Robert Grabarek, P.E., L.S., LEP
President



A-3

AGGREGATE YARD SOIL SAMPLES
DEPARTMENT OF PUBLIC WORKS FACILITY
90 ROD HIGHWAY, FAIRFIELD, CT

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146 EAST MAIN STREET . CLINTON, CT 06413

PHONE: 860.669.8651

Mr. Scott Bartlett, Superintendent, Director of Public Works Operations
Fairfield Department of Public Works
725 Old Post Road
Fairfield, CT 06824

11 May 2018

Re: Soils Sampling, Perimeter Stockpiles
Aggregate Recycling Yard Berm Project, Fairfield, CT
Collection date: 03 & 08 May 2018

Per your request, samples of soils from the above stockpiles were collected to determine concentrations of constituents of concern (COCs) related to available environmental and health & safety standards and guidelines. Samples were composited from each area and were collected in new glassware supplied by the laboratory and stored in compliance with standard sample preservation procedures. The composite samples were submitted to Complete Environmental Testing, Inc., a Connecticut Certified Laboratory. Samples were compared to the DEEP Remediation Standards Regulations (RSRs) Direct Exposure Criteria (DEC) for environmental consideration. Samples were analyzed for PCBs, ETPH, arsenic, and lead. The following is a comparison of the results of the analyses to their respective evaluation criteria.

Sample Summary Table

COMPOUND	ETPH	Arsenic	Lead	PCBs
(Residential/Industrial & Commercial) mg/kg	500/2500	10/10	400/1000	1/10
SP1 (Harvest NE Stockpile)	2800	ND<2.5	16	ND<0.13
SP2 – South Perimeter Stockpile	680	6.8	66	ND<0.10
SP3 – South Perimeter Stockpile	530	2.7	31	ND<0.10
SP4 – South Perimeter Stockpile	ND<53	4.8	29	ND<0.11
SP5 – South Perimeter Stockpile	ND<54	5.9	35	ND<0.11
SP6 – South Perimeter Stockpile	ND<54	5.7	29	ND<0.11
PS1 – South Perimeter Stockpile	880	3.8	87	2.1
PS2 – South Perimeter Stockpile	1700	5.3	60	0.64
SSE – South Perimeter Stockpile	580	2.3	9.7	ND<0.11
SSW – South Perimeter Stockpile	880	2.5	2.3	ND<0.11

Green is above the Residential DEC Blue is above the Residential & Industrial/Commercial DEC ND< = Not detected < analytical limit

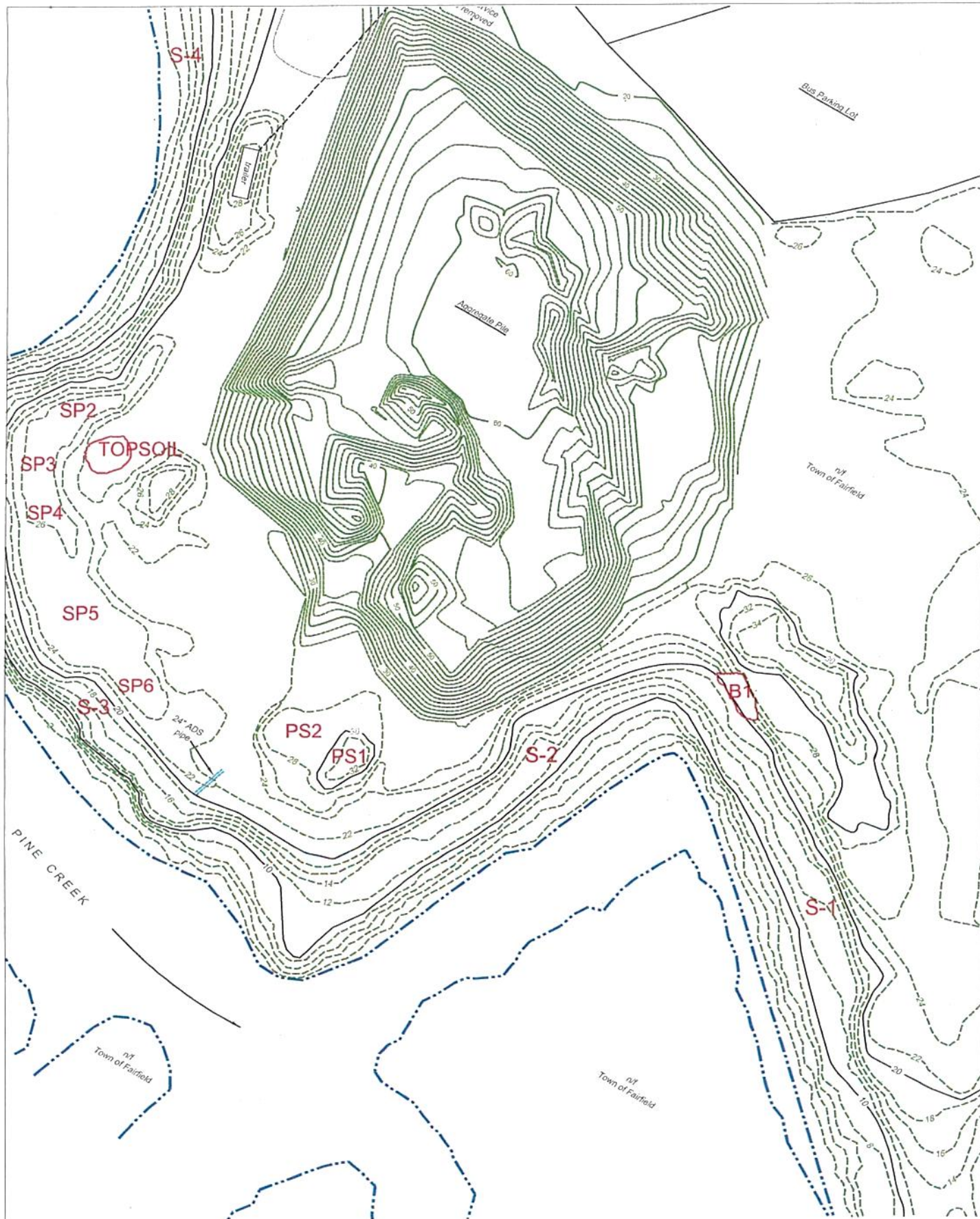
Stockpile samples SP4-SP6 had ETPH, lead, arsenic, and PCBs all below the Residential DEC. The remaining samples all had ETPH above the Residential DEC most likely due to the presence of asphalt fragments. One sample had ETPH above the Industrial/Commercial DEC as well, which was expected as it was predominantly composed of asphalt fragments. PCBs, arsenic and lead were all below the Residential and the Industrial/Commercial DEC except for location PS1 which had PCBs present above the residential DEC but below the Industrial/Commercial DEC. It is recommended that this stockpile be further tested for PCBs prior to relocating it.

Should you have any questions regarding the above, please contact me.

Sincerely,

Osprey Environmental Engineering, LLC.

Robert Grabarek, P.E., L.S., LEP
President



A-4

AGGREGATE YARD SOIL SAMPLES
DEPARTMENT OF PUBLIC WORKS FACILITY
80 ROD HIGHWAY, FAIRFIELD, CT

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146 EAST MAIN STREET . CLINTON, CT 06413

PHONE: 860.669.8651

Mr. Scott Bartlett, Superintendent, Director of Public Works Operations
Fairfield Department of Public Works
725 Old Post Road
Fairfield, CT 06824

11 May 2018

Re: Soils Sampling, Grids F2-M2
Aggregate Recycling Yard Berm Project, Fairfield, CT
Collection date: 08 May 2018

Per your request, samples of soils from the above delineated site grids were collected to determine concentrations of constituents of concern (COCs) related to available environmental and health & safety standards and guidelines. Samples were composited from each grid and were collected in new glassware supplied by the laboratory and stored in compliance with standard sample preservation procedures. The composite samples were submitted to Complete Environmental Testing, Inc., a Connecticut Certified Laboratory. Samples were compared to the DEEP Remediation Standards Regulations (RSRs) Direct Exposure Criteria (DEC) for environmental consideration. Samples were analyzed for PCBs, ETPH, arsenic, and lead. The following is a comparison of the results of the analyses to their respective evaluation criteria.

Sample Summary Table

COMPOUND	ETPH	Arsenic	Lead	PCBs
(Residential/Industrial & Commercial) mg/kg	500/2500	10/10	400/1000	1/10
Grid F2	2100	1.9	15	ND<0.11
Grid G2	2900	2.6	22	ND<0.11
Grid H2	2500	2.2	23	ND<0.11
Grid I2	830	3.3	32	0.38
Grid J2	2400	3.8	32	ND<0.11
Grid K2	2100	4.5	58	ND<0.11
Grid L2	2100	2.8	22	ND<0.11
Grid M2	1200	2.6	32	ND<0.11

Green is above the Residential DEC *Blue* is above the Residential & Industrial/Commercial DEC

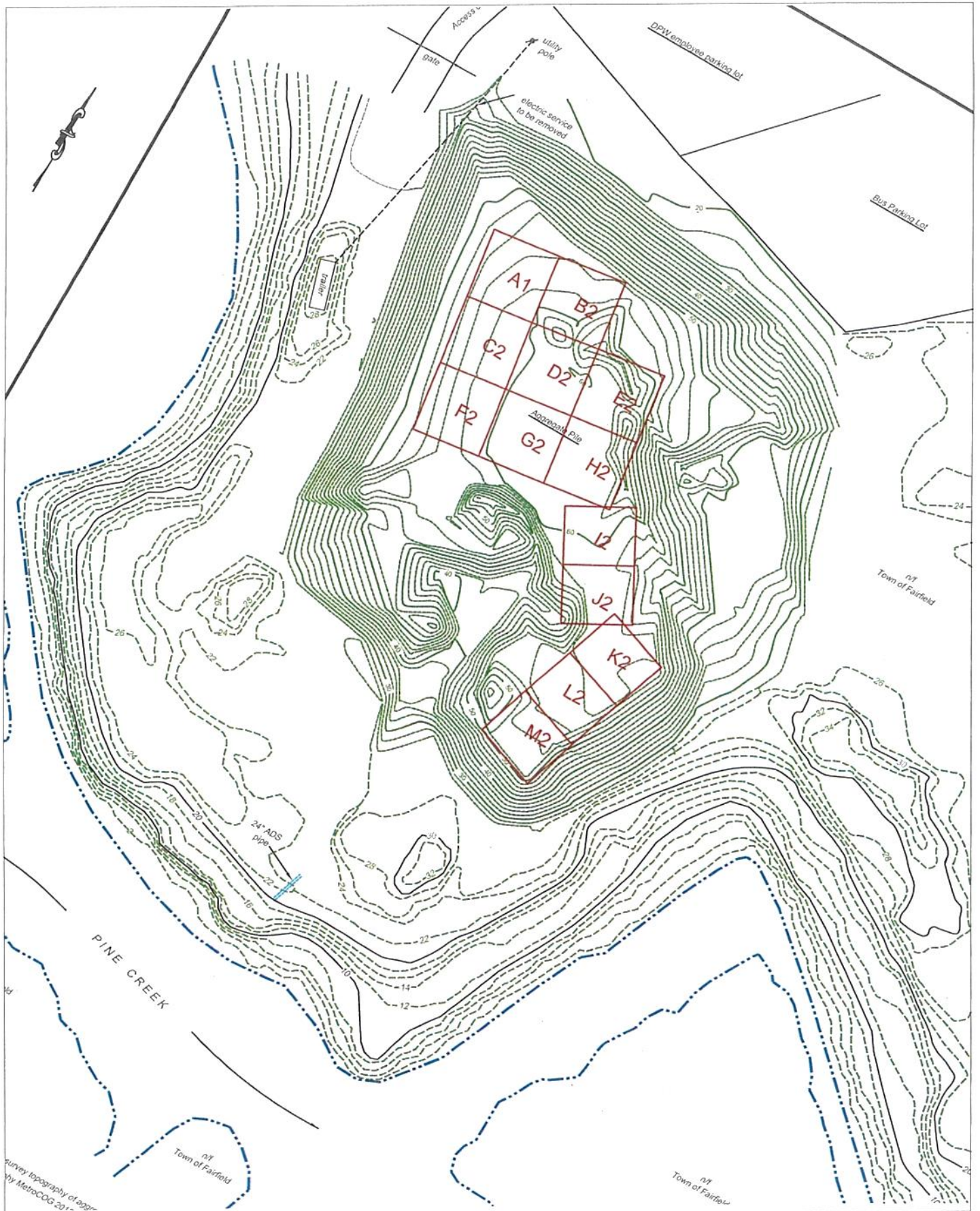
The Grid samples all had ETPH above the Residential DEC most likely due to the presence of asphalt fragments. One sample had ETPH above the Industrial/Commercial DEC as well, which was expected as it had higher concentrations of asphalt. PCBs, arsenic and lead were all below the Residential and the Industrial/Commercial DEC.

Should you have any questions regarding the above, please contact me.

Sincerely,

Osprey Environmental Engineering, LLC.

Robert Grabarek, P.E., L.S., LEP
President



A-3

AGGREGATE YARD SOIL SAMPLES
DEPARTMENT OF PUBLIC WORKS FACILITY
80 ROD HIGHWAY, FAIRFIELD, CT

OSPREY
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PHONE: 860.669.8651

Mr. Scott Bartlett, Superintendent, Director of Public Works Operations
Fairfield Department of Public Works
725 Old Post Road
Fairfield, CT 06824

15 May 2018

Re: Soils Sampling, Grids A3-D3, N0, O0, PS3, PS4
Aggregate Recycling Yard Berm Project, Fairfield, CT
Collection date: 11 May 2018

Per your request, samples of soils from the above delineated site grids were collected to determine concentrations of constituents of concern (COCs) related to available environmental and health & safety standards and guidelines. Samples were also collected from one of the southerly stockpiles (previously sampled PS1 and PS2) that had elevated PCB concentrations to recheck the concentrations of this COC. Samples were composited from each grid and were collected in new glassware supplied by the laboratory and stored in compliance with standard sample preservation procedures. The composite samples were submitted to Complete Environmental Testing, Inc., a Connecticut Certified Laboratory. Samples were compared to the DEEP Remediation Standards Regulations (RSRs) Direct Exposure Criteria (DEC) for environmental consideration. Samples were analyzed for PCBs, ETPH, arsenic, and lead. The following is a comparison of the results of the analyses to their respective evaluation criteria.

Sample Summary Table

COMPOUND	ETPH	Arsenic	Lead	PCBs
(Residential/Industrial & Commercial) mg/kg	500/2500	10/10	400/1000	1/10
Grid A3	890	2.2	35	ND<0.11
Grid B3	720	1.2	25	ND<0.11
Grid C3	1400	2.3	30	ND<0.11
Grid D3	1800	2.6	31	0.22
Grid N0	760	2.3	35	0.35
Grid O0	880	2.3	34	0.84
Grid PS3	1100	2.5	30	ND<0.10
Grid PS4	910	2.8	81	1.4

Green is above the Residential DEC Blue is above the Residential & Industrial/Commercial DEC

Note: Samples N0 and O0 are referred to in the lab analysis sheets as N1 and O1. These were redesignated to the identifications in the above table to avoid confusion with other grid designations.

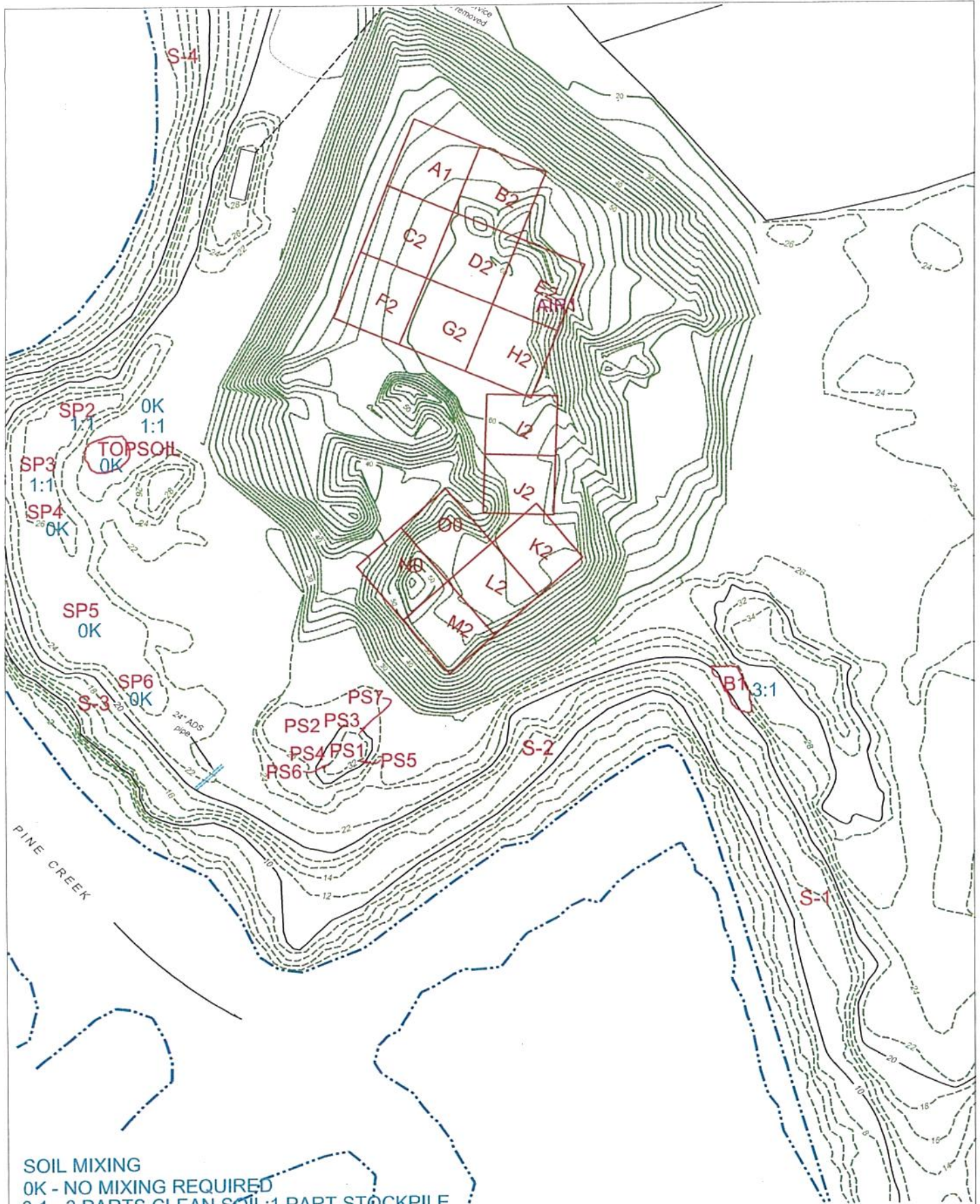
The Grid samples all had ETPH above the Residential DEC most likely due to the presence of asphalt fragments. PCBs, arsenic and lead were all below the Residential and the Industrial/Commercial DEC with the exception of stockpile sample PS4 which was slightly above the Residential DEC but well below the Industrial/Commercial DEC. This was consistent with the previous samples from this area.

Should you have any questions regarding the above, please contact me.

Sincerely,

Osprey Environmental Engineering, LLC.

Robert Grabarek, P.E., L.S., LEP
President



A-4

AGGREGATE YARD SOIL BLENDING
 DEPARTMENT OF PUBLIC WORKS FACILITY
 90 ROD HIGHWAY, FAIRFIELD, CT

OSPREY
 ENVIRONMENTAL ENGINEERING, LLC
 146 East Main Street
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OSPREY ENVIRONMENTAL ENGINEERING, LLC.

146 EAST MAIN STREET . CLINTON, CT 06413

PHONE: 860.669.8651

Mr. Scott Bartlett, Superintendent, Director of Public Works Operations
Fairfield Department of Public Works
725 Old Post Road
Fairfield, CT 06824

18 May 2018

Re: Soils Sampling, Grids K3-M3, N1, O1, PS5-7
Aggregate Recycling Yard Berm Project, Fairfield, CT
Collection date: 17 May 2018

Per your request, samples of soils from the above delineated site grids were collected to determine concentrations of constituents of concern (COCs) related to available environmental and health & safety standards and guidelines. Samples were composited from each grid and were collected in new glassware supplied by the laboratory and stored in compliance with standard sample preservation procedures. The composite samples were submitted to Complete Environmental Testing, Inc., a Connecticut Certified Laboratory. Samples were compared to the DEEP Remediation Standards Regulations (RSRs) Direct Exposure Criteria (DEC) for environmental consideration. Samples were analyzed for PCBs, ETPH, arsenic, and lead. The following is a comparison of the results of the analyses to their respective evaluation criteria.

Sample Summary Table

COMPOUND	ETPH	Arsenic	Lead	PCBs
(Residential/Industrial & Commercial) mg/kg	500/2500	10/10	400/1000	1/10
Grid K3	1800	3.0	51	ND<0.11
Grid L3	1600	3.5	22	ND<0.11
Grid M3	2100	5.8	47	ND<0.11
Grid N1	830	2.8	34	ND<0.12
Grid O1	1600	4.0	29	ND<0.11
Grid PS5	1300	2.5	52	0.25
Grid PS6	1600	3.0	39	0.46
Grid PS7	1100	2.7	51	0.31

Green is above the Residential DEC *Blue* is above the Residential & Industrial/Commercial DEC

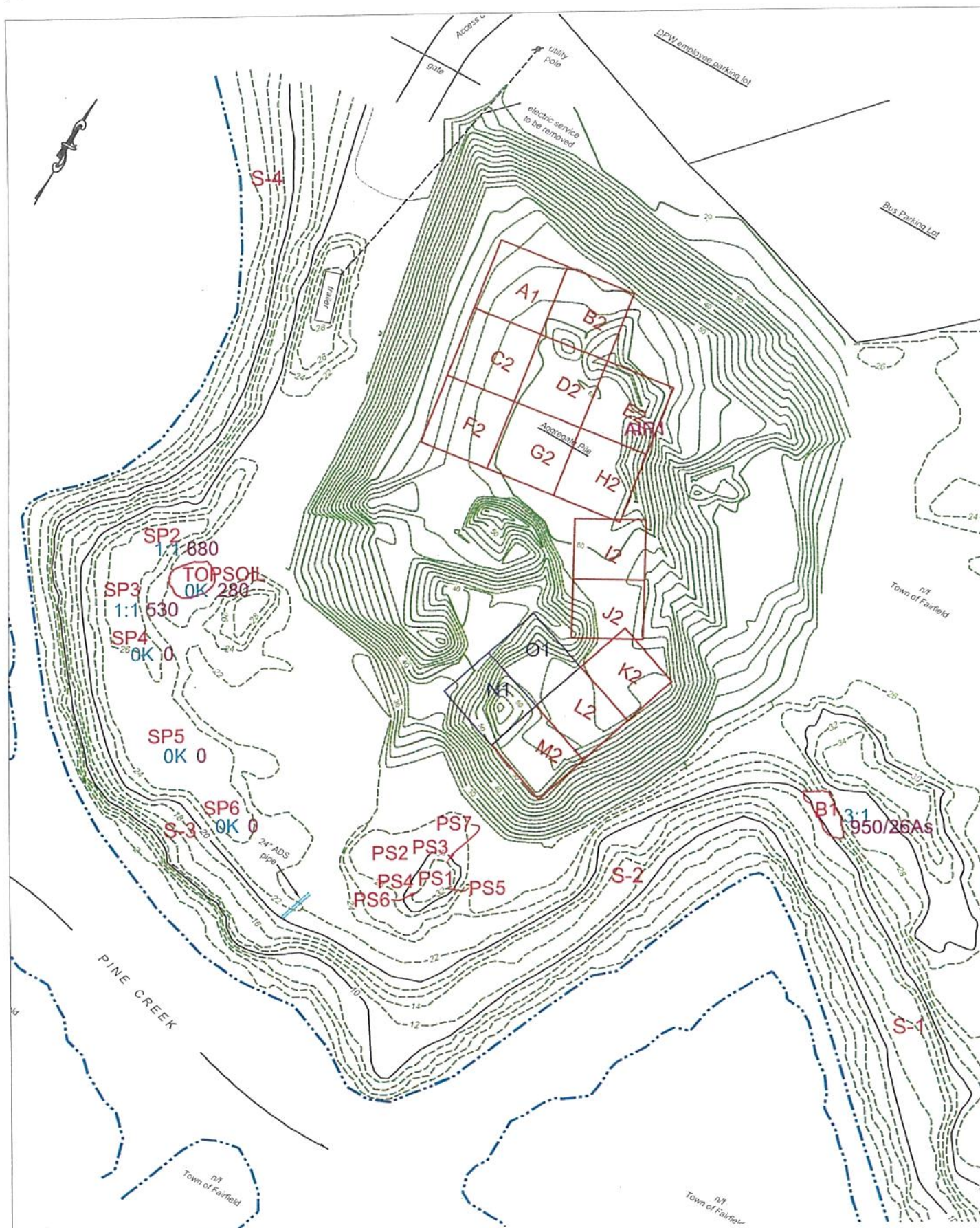
The Grid samples all had ETPH above the Residential DEC most likely due to the presence of asphalt fragments. PCBs, arsenic and lead were all below the Residential and the Industrial/Commercial DEC.

Should you have any questions regarding the above, please contact me.

Sincerely,

Osprey Environmental Engineering, LLC.

Robert Grabarek, P.E., L.S., LEP
President



A-3

AGGREGATE YARD SOIL SAMPLES
DEPARTMENT OF PUBLIC WORKS FACILITY
90 ROD HIGHWAY, FAIRFIELD, CT

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OSPREY ENVIRONMENTAL ENGINEERING, LLC.

146 EAST MAIN STREET . CLINTON, CT 06413

PHONE: 860.669.8651

Mr. Scott Bartlett, Superintendent, Director of Public Works Operations
Fairfield Department of Public Works
725 Old Post Road
Fairfield, CT 06824

30 May 2018

Re: Soils Sampling, Grids P0, R0-U0, Pond 1, Pond 2
Aggregate Recycling Yard Berm Project, Fairfield, CT
Collection date: 25 May 2018

Per your request, samples of soils from the above delineated site grids and sediment pond locations were collected to determine concentrations of constituents of concern (COCs) related to available environmental and health & safety standards and guidelines. Samples were composited and were collected in new glassware supplied by the laboratory and stored in compliance with standard sample preservation procedures. The composite samples were submitted to Complete Environmental Testing, Inc., a Connecticut Certified Laboratory. Samples were compared to the DEEP Remediation Standards Regulations (RSRs) Direct Exposure Criteria (DEC) for environmental consideration. Samples were analyzed for PCBs, ETPH, arsenic, mercury, and lead. Samples were also analyzed for total mercury. The following is a comparison of the results of the analyses to their respective evaluation criteria.

Sample Summary Table

COMPOUND	ETPH	Arsenic	Lead	Mercury	PCBs
(Residential/Industrial & Commercial) mg/kg	500/2500	10/10	400/1000	20/610	1/10
Grid P0	2100	3.3	19	ND<0.15	0.28
Grid R0	1200	5.3	72	ND<0.13	0.43
Grid S0	1100	4.1	30	ND<0.14	0.36
Grid T0	1500	3.6	32	0.28	0.74
Grid U0	ND<55	13	20	ND<0.14	ND<0.11
Pond 1	2800	4.2	210	ND<0.13	8.6
Pond 2	2100	3.6	27	ND<0.14	ND<0.11

Green is above the Residential DEC Blue is above the Residential & Industrial/Commercial DEC

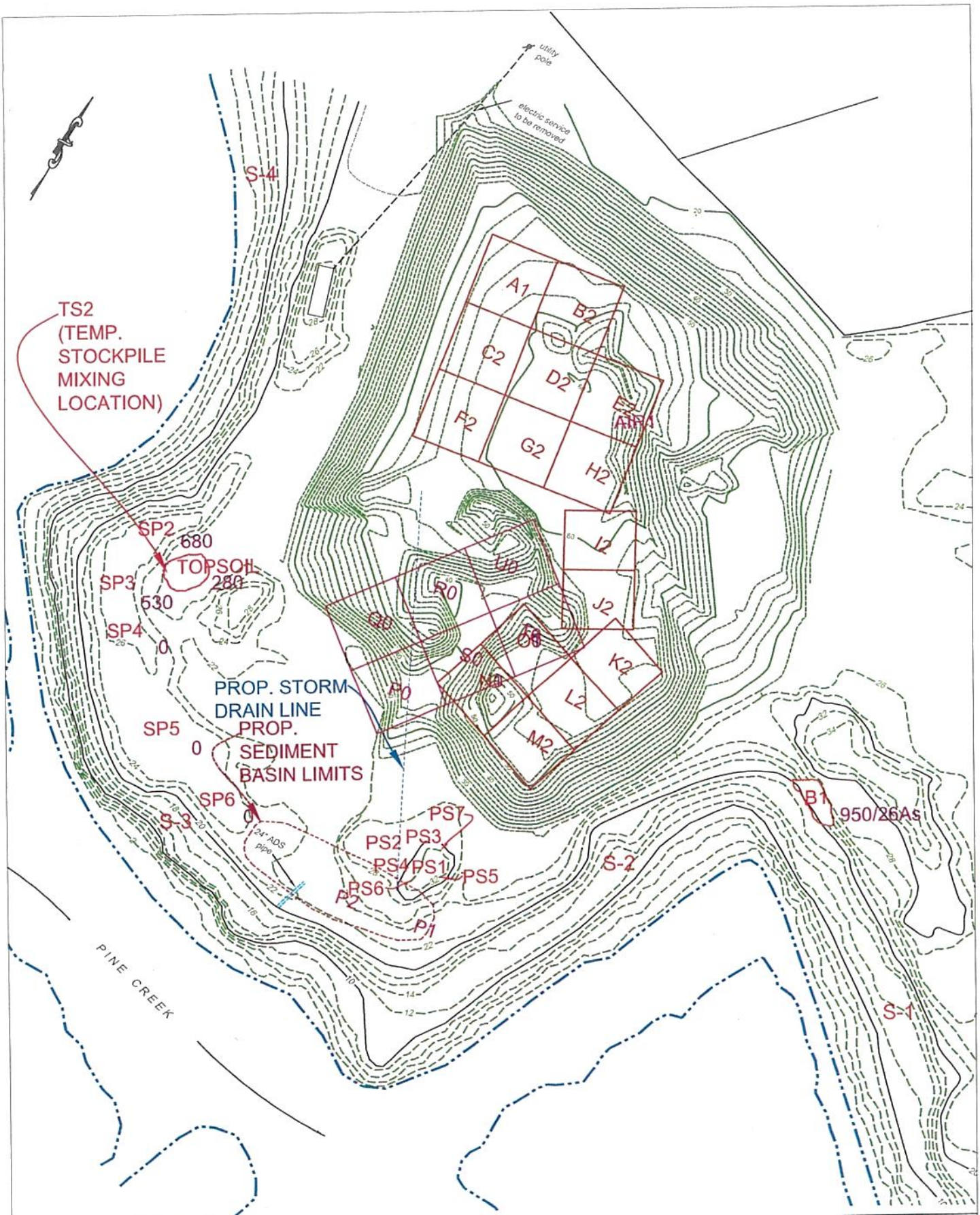
The Grid samples all had ETPH above the Residential DEC except for Grid U0, most likely due to the presence of asphalt fragments. PCBs, arsenic and lead were all below the Residential and the Industrial/Commercial DEC except for Grid U0 which had arsenic present above the residential and Industrial/Commercial DEC (both set at 10 mg/kg), and the Pond 1 sample (east end of the sedimentation basin) which had ETPH above the Industrial/Commercial DEC and PCBs above the Residential DEC.

Should you have any questions regarding the above, please contact me.

Sincerely,

Osprey Environmental Engineering, LLC.

Robert Grabarek, P.E., L.S., LEP
President



A-3

AGGREGATE YARD SOIL SAMPLES
DEPARTMENT OF PUBLIC WORKS FACILITY
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OSPREY ENVIRONMENTAL ENGINEERING, LLC.

146 EAST MAIN STREET . CLINTON, CT 06413

PHONE: 860.669.8651

Mr. Scott Bartlett, Superintendent, Director of Public Works Operations
Fairfield Department of Public Works
725 Old Post Road
Fairfield, CT 06824

06 June 2018

Re: Soils Sampling, Access Drive, Grid FE1 & HN1
Aggregate Recycling Yard Berm Project, Fairfield, CT
Collection date: 05 June 2018

Per your request, samples of soils from the above delineated site grids F (east), H (north), and the access drive were collected to determine concentrations of constituents of concern (COCs) related to available environmental and health & safety standards and guidelines. Samples were composited and were collected in new glassware supplied by the laboratory and stored in compliance with standard sample preservation procedures. The composite samples were submitted to Complete Environmental Testing, Inc., a Connecticut Certified Laboratory. Samples were compared to the DEEP Remediation Standards Regulations (RSRs) Direct Exposure Criteria (DEC) for environmental consideration. Samples were analyzed for PCBs, ETPH, arsenic, mercury, and lead. The following is a comparison of the results of the analyses to their respective evaluation criteria.

Sample Summary Table

COMPOUND	ETPH	Arsenic	Lead	Mercury	PCBs
(Residential/Industrial & Commercial) mg/kg	500/2500	10/10	400/1000	20/610	1/10
Access Drive	1600	4.9	27	ND<0.14	1.2
Grid H north side	2800	5.0	28	ND<0.16	ND<0.13
Grid F east side	1600	27	40	ND<0.14	ND<0.12

Green is above the Residential DEC *Blue* is above the Residential & Industrial/Commercial DEC

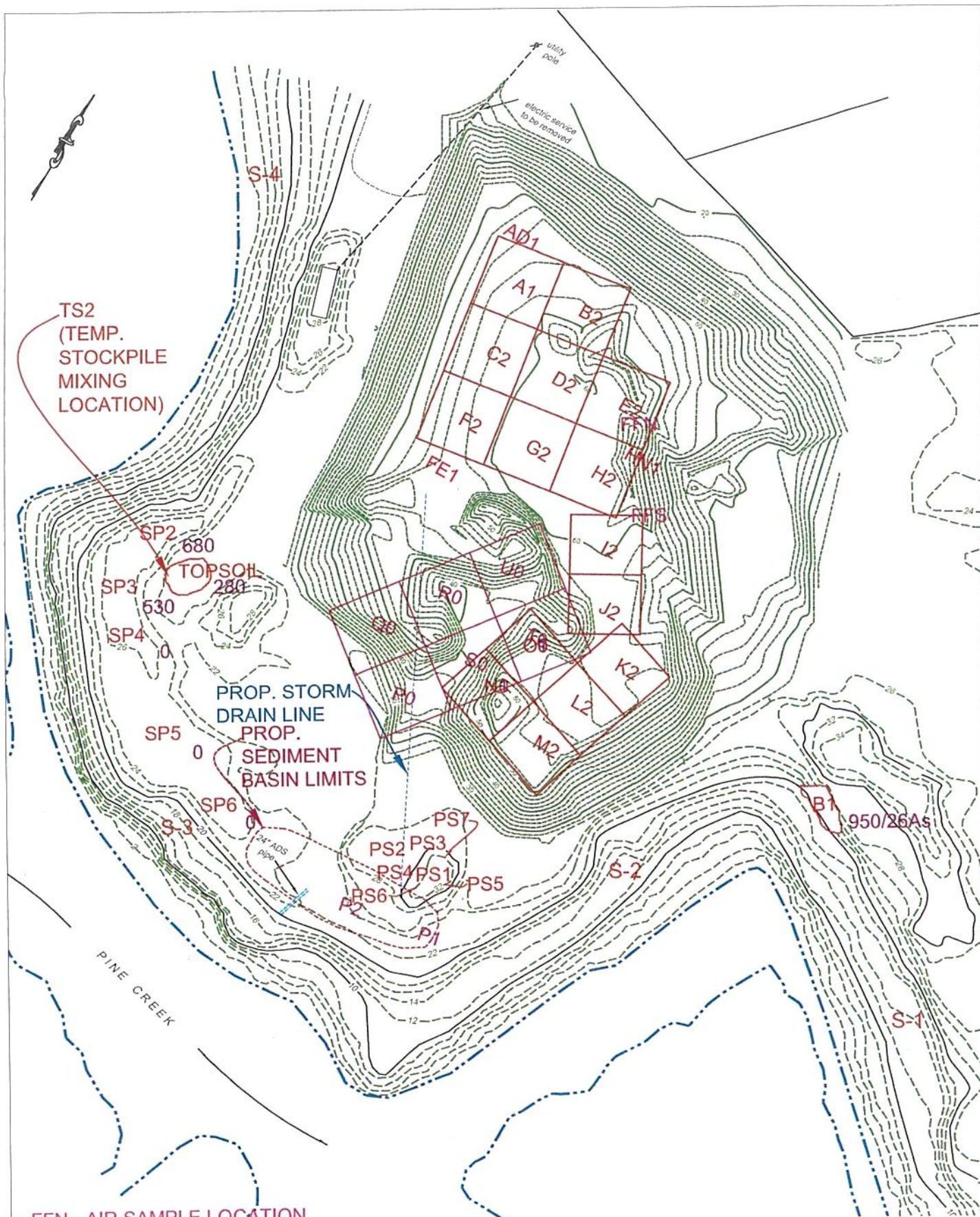
The samples all had ETPH above the Residential DEC, most likely due to the presence of asphalt fragments. Grid H had ETPH present above the Industrial/Commercial DEC, due to the asphalt millings. PCBs, arsenic and lead were all below the Residential and the Industrial/Commercial DEC except for the access drive sample which had PCBs slightly above the Residential DEC and Grid F which had arsenic above the Residential & Industrial/Commercial DEC (both set at 10 mg/kg).

Should you have any questions regarding the above, please contact me.

Sincerely,

Osprey Environmental Engineering, LLC.

Robert Grabarek, P.E., L.S., LEP
President



FFN - AIR SAMPLE LOCATION

A-3

AGGREGATE YARD SAMPLES
DEPARTMENT OF PUBLIC WORKS FACILITY
90 ROD HIGHWAY, FAIRFIELD, CT

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OSPREY ENVIRONMENTAL ENGINEERING, LLC.

146 EAST MAIN STREET, CLINTON, CT 06413

PHONE: 860.669.8651

Mr. Scott Bartlett, Superintendent, Director of Public Works Operations
Fairfield Department of Public Works
725 Old Post Road
Fairfield, CT 06824

13 June 2018

Re: Soils Sampling, Access Drive, Grids A4-E4, P1-S1, G3, PS1, PSS1
Aggregate Recycling Yard Berm Project, Fairfield, CT
Collection date: 12 June 2018

Per your request, samples of soils from the above delineated site grids were collected to determine concentrations of constituents of concern (COCs) related to available environmental and health & safety standards and guidelines. Samples were composited and were collected in new glassware supplied by the laboratory and stored in compliance with standard sample preservation procedures. The composite samples were submitted to Complete Environmental Testing, Inc., a Connecticut Certified Laboratory. Samples were compared to the DEEP Remediation Standards Regulations (RSRs) Direct Exposure Criteria (DEC) for environmental consideration. Samples were analyzed for PCBs, ETPH, arsenic, mercury, and lead. The following is a comparison of the results of the analyses to their respective evaluation criteria.

Sample Summary Table

COMPOUND	ETPH	Arsenic	Lead	Mercury	PCBs
(Residential/Industrial & Commercial) mg/kg	500/2500	10/10	400/1000	20/610	1/10
Grid A4	1200	3.9	47	ND<0.13	ND<0.11
Grid B4	1000	4.5	75	ND<0.13	ND<0.11
Grid D4	410	4.2	49	ND<0.13	ND<0.11
Grid E4	2200	2.4	19	ND<0.13	ND<0.11
Grid P1	230	3.3	26	ND<0.13	0.20
Grid Q1	580	4.4	37	ND<0.13	1.90
Grid R1	540	5.7	190	0.28	9.6
Grid S1	480	4.8	140	0.25	7.6
Grid G3	1100	4.4	39	ND<0.13	ND<0.11
Grid PS1	200	13	39	ND<0.13	0.84
Grid PSS1	780	4.5	29	ND<0.13	0.32

Green is above the Residential DEC *Blue* is above the Residential & Industrial/Commercial DEC

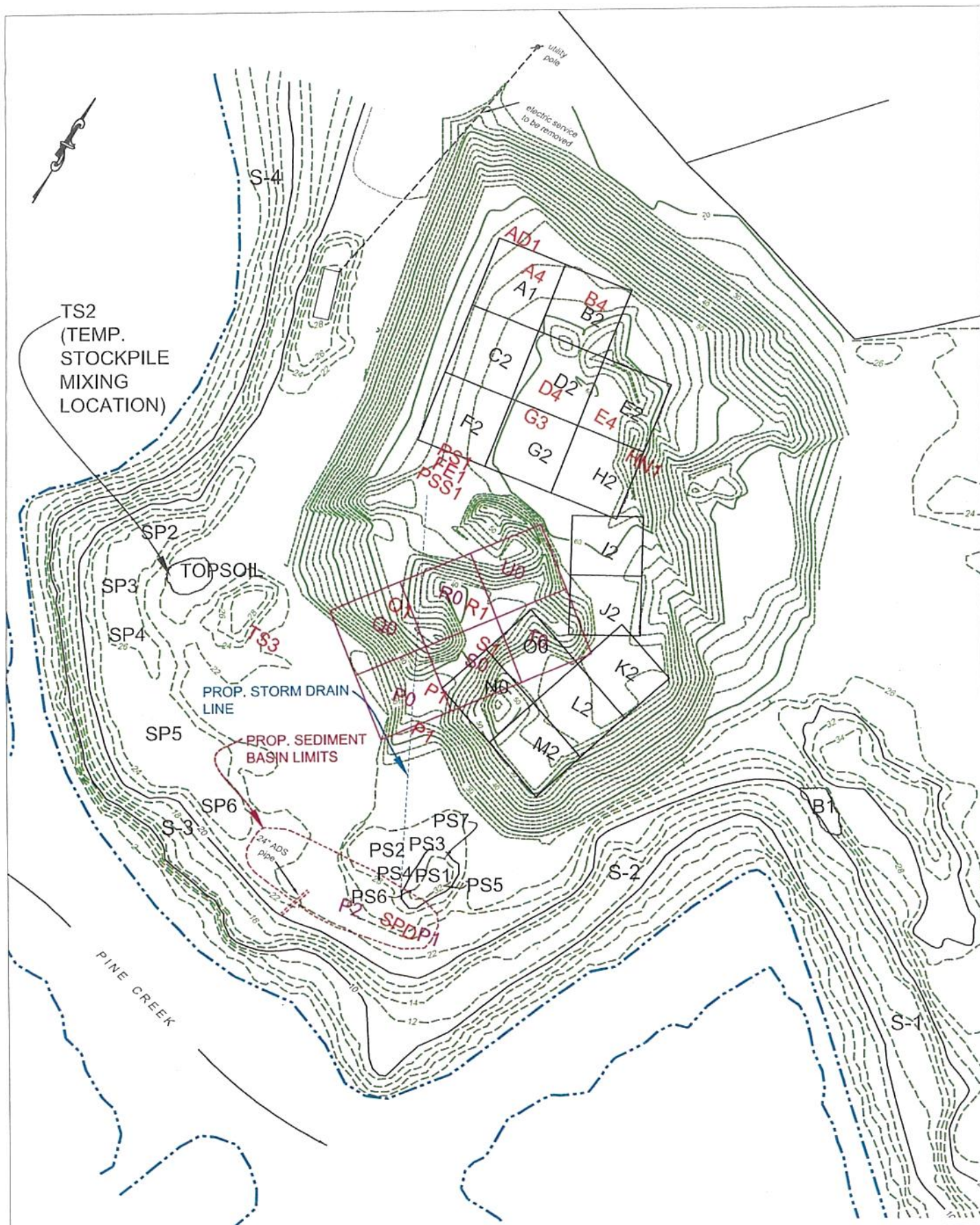
Some of the samples had ETPH above the Residential DEC, most likely due to the presence of asphalt fragments. PCBs, arsenic and lead were all below the Residential and the Industrial/Commercial DEC except for Grids Q1, R1 and S1 which had PCBs above the Residential DEC but below the Industrial/Commercial DEC, and a sample adjacent to Grid F (PS1) which had arsenic above the Residential & Industrial/Commercial DEC (both set at 10 mg/kg).

Should you have any questions regarding the above, please contact me.

Sincerely,

Osprey Environmental Engineering, LLC.

Robert Grabarek, P.E., L.S., LEP
President



A-6

AGGREGATE YARD SAMPLES
DEPARTMENT OF PUBLIC WORKS FACILITY
90 ROD HIGHWAY, FAIRFIELD, CT

OSPREY
ENVIRONMENTAL ENGINEERING, LLC
146 East Main Street
Clinton, CT 06413
Phone (860) 669-8651

DRAWN BY: RJG
SCALE: 1"=100'
DATE: 06.13.18
REVISIONS:



OSPREY ENVIRONMENTAL ENGINEERING, LLC.
146 EAST MAIN STREET . CLINTON, CT 06413
PHONE: 860.669.8651

18 June 2018

Mr. Scott Bartlett, Superintendent, Director of Public Works Operations
Fairfield Department of Public Works
725 Old Post Road
Fairfield, CT 06824

Re: Soils Sampling, Grids V0-Y0, C3
Aggregate Recycling Yard Berm Project, Fairfield, CT
Collection date: 15 June 2018

Per your request, samples of soils from the above referenced grids were collected to determine concentrations of constituents of concern (COCs) related to available environmental and health & safety standards and guidelines. Samples were composited and were collected in new glassware supplied by the laboratory and stored in compliance with standard sample preservation procedures. The composite samples were submitted to Complete Environmental Testing, Inc., a Connecticut Certified Laboratory. Samples were compared to the DEEP Remediation Standards Regulations (RSRs) Direct Exposure Criteria (DEC) for environmental consideration. Samples were analyzed for PCBs, ETPH, arsenic, mercury, and lead. The following is a comparison of the results of the analyses to their respective evaluation criteria.

Sample Summary Table

COMPOUND	ETPH	Arsenic	Lead	Mercury	PCBs
(Residential/Industrial & Commercial) mg/kg	500/2500	10/10	400/1000	20/610	1/10
V0	800	6.7	220	1.1	0.33
W0	1000	2.4	28	ND<0.15	0.65
X0	1400	2.5	71	ND<0.13	ND<0.11
Y0	680	6.6	120	ND<0.13	ND<0.11
C3	1800	2.9	29	ND<0.13	ND<0.10

Green is above the Residential DEC *Blue* is above the Residential & Industrial/Commercial DEC

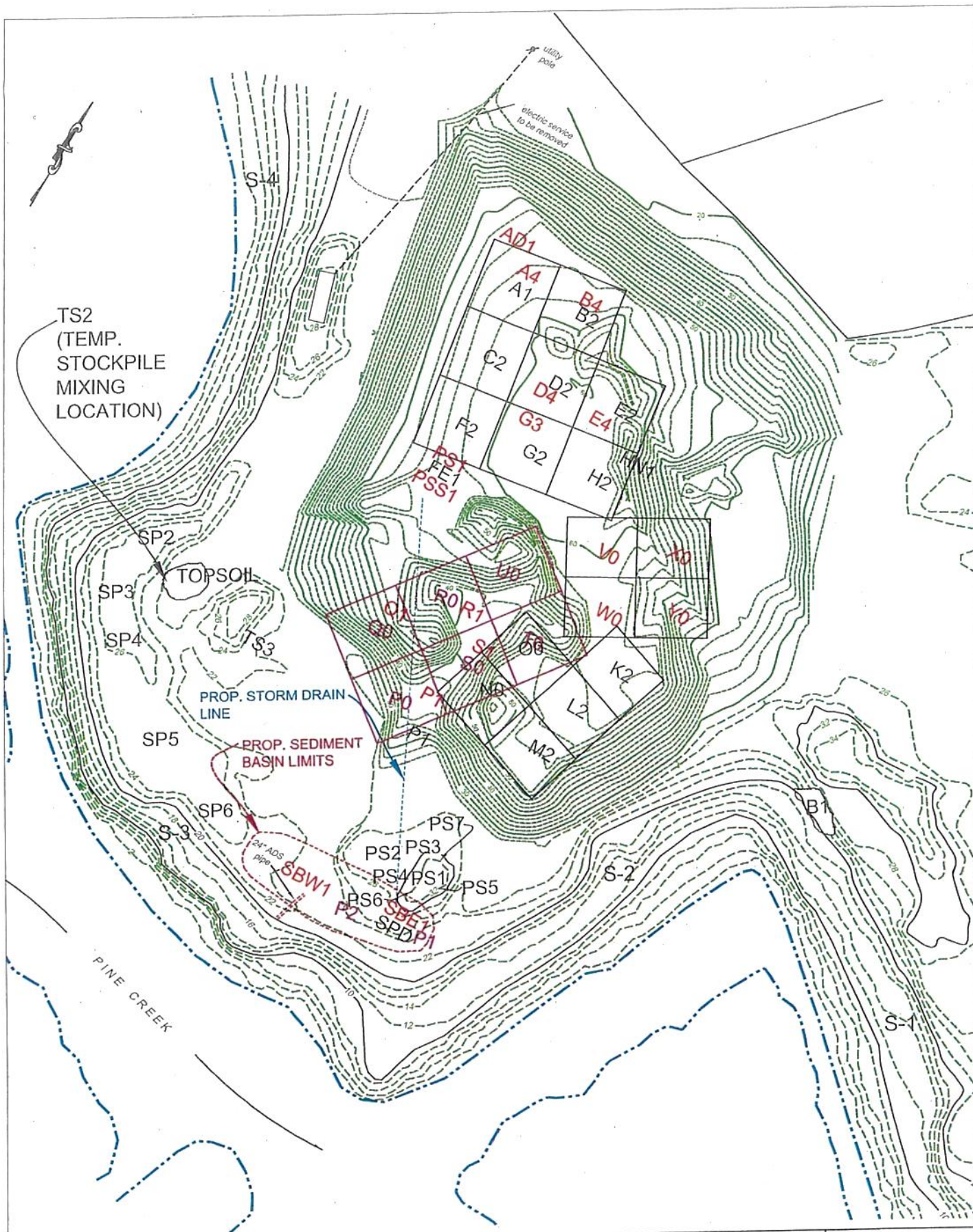
The samples had ETPH above the Residential DEC but below the Industrial/Commercial DEC, most likely due to the presence of asphalt fragments. PCBs, arsenic, mercury, and lead were all below the Residential and the Industrial/Commercial DEC.

Should you have any questions regarding the above, please contact me.

Sincerely,

Osprey Environmental Engineering, LLC.

Robert Grabarek, P.E., L.S., LEP
President



A-6

AGGREGATE YARD SAMPLES
DEPARTMENT OF PUBLIC WORKS FACILITY
90 ROD HIGHWAY, FAIRFIELD, CT

OSPREY
ENVIRONMENTAL ENGINEERING, LLC
146 East Main Street
Clinton, CT 06413
Phone (860) 669-8651

DRAWN BY: RJC
SCALE: 1"=100'
DATE: 06.13.18
REVISIONS:



OSPREY ENVIRONMENTAL ENGINEERING, LLC.
146 EAST MAIN STREET . CLINTON, CT 06413
PHONE: 860.669.8651

07 June 2018

Mr. Scott Bartlett, Superintendent, Director of Public Works Operations
Fairfield Department of Public Works
725 Old Post Road
Fairfield, CT 06824

Re: Soils Sampling and Materials Reuse Criteria
Aggregate Recycling Yard Berm Project, Fairfield, CT

Per your request, the following is a summary of remediation criteria that was set forth at the beginning of the Aggregate Yard soil relocation project and has been adhered to during the project. The site was known to have certain constituents present due to the nature of the materials identified in the Phase I Environmental Site Assessment and subsequent discussions with Town staff. These included petroleum products associated with asphalt pavement/millings, lead and arsenic, and PCBs. Mercury was later identified as a potential Constituent of Concern (COC) based on verbal input from a Town staff member. These COCs have been tested in soil samples collected prior to the disturbance of materials through earth relocation site activities. Two rounds of air samples have also been conducted to determine whether COCs are present in air/dust and whether additional engineering or other controls are necessary to provide safe working conditions.

Results of the laboratory analyses have been compared to CT Department of Environmental Protection (DEEP) Remediation Standards Regulations (RSRs) Direct Exposure Criteria (DEC) values (long term exposure thresholds) for soil relocation assessment and applicable OSHA/NIOSH Recommended Exposure Limits (RELs) or Permissible Exposure Limits (PELs), both of which are based on acceptable 8-hour daily exposure levels for workers.

The table below summarizes the chemical hazards anticipated at the site and respective safety limits.

MATERIALS	EXPOSURE ROUTES	RSR DIRECT EXPOSURE CRITERIA LIMITS (DECS) – mg/kg	NIOSH RECOMMENDED EXPOSURE LIMITS (RELs) ppm
Petroleum hydrocarbons (ETPH)	Inhalation, Skin Absorption, Skin and/or Eye Contact, Ingestion	Residential – 500 Industrial – 2,500	Not available
Polychlorinated biphenyls (PCBs)	Inhalation, Skin Absorption, Skin and/or Eye Contact, Ingestion	Residential – 1 Industrial – 10	0.001 mg/m ³
Lead	Inhalation, Ingestion, Skin and/or Eye Contact	Residential – 400, Industrial – 1,000	0.05 mg/m ³
Arsenic		Residential – 10, Industrial – 10	0.01 mg/m ³
Mercury		Residential – 20, Industrial – 610	0.1 mg/m ³

Once soil areas are characterized with respect to chemical constituents, the decision criteria are as follows:

1. If soils meet Residential DEC – Use as topsoil
2. If soils are **above Residential DEC but below Industrial/Commercial DEC** – Acceptable to remain on-site in the Aggregate Yard area where access is restricted to municipal workers (meets the Industrial/Commercial use criteria) **or mix to bring COCs below Residential DEC if they are to remain at the surface in areas accessible to the public in the future.**
3. If soils are above the Industrial/Commercial DEC – Remove from site if they are PCBs. Bury in berm to avoid exposure or mix to bring COCs below Residential DEC if they are to remain at the surface in areas accessible to the public.

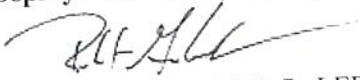
It should be noted that the above criteria are based on long term exposure of soils to workers and to the public, and on short term dust exposures to workers during site disturbance activities. These criteria are different than that used for the

initial cleanup of the regulated waste remediation project performed by CTR Services last year (see "*REMEDIATION ACTION REPORT, PCB-Contaminated Fill Pile, Town Reclamation Yard, 183 Richard White Way, Fairfield, Connecticut*" prepared by LES and dated 05 December 2017. The remediation criteria used in that project were different than this project as the materials being removed were potentially subject to Federal TSCA regulations which are quite different than the above environmental/health & safety based criteria applicable to the berm project.

Should you have any questions regarding the above, please contact me.

Sincerely,

Osprey Environmental Engineering, LLC.



Robert Grabarek, P.E., L.S., LEP
President



OSPREY ENVIRONMENTAL ENGINEERING, LLC

146 East Main Street, Clinton, CT 06413

Phone: 860.669.8651

Mr. Joseph Michelangelo, P.E., Director of Public Works
Fairfield Department of Public Works
725 Old Post Road
Fairfield, CT 06824

10 January 2019

Re: Response to DEEP Comments - Unpermitted Landfill Closure
Aggregate Recycling Yard, Fairfield, CT

DRAFT

The following is offered in response to the CT Department of Energy & Environmental Protection comments set forth in a letter dated 26 September 2018 regarding the application for the above reference project.

1. Please provide copies of the supplied engineering drawing (i.e., Drawing A-1 Landfill Closure Site Improvements and Sampling Locations, dated July 30, 2017) that depict site views, the limits of the disposal area which should be clearly delineated and labeled, including the location of any test pits, bore holes, etc. that were excavated to confirm said limits, cross sections through the site, a minimum of one parallel and one perpendicular to groundwater flow depicting existing, site preparation and proposed final grades, details on proposed sedimentation and erosion controls, cross section and construction details of site access road, and a distinct drawing that clearly depicts existing grades and proposed final grades. Please remember that the engineering drawings including any revised engineering drawing must be signed and stamped by a licensed professional engineer. The site plan must be drawn at a scale appropriate to the setting and must show a clearly labeled, detailed presentation of all significant features of the proposed project and within a 500 foot radius of the Facility.

Drawings addressing the above are attached. These include:

a) The limits of the disposal area have been depicted on the drawing. They were determined based on an interview with the former site operations manager and an examination of aerial photographs (appended) during the period the landfill was in operation. No subsurface exploration activities (test pits, soil borings) were conducted as the area of the landfill was readily apparent from site photographs (attached) and the nature of the site (excavation in flat marsh area that was subsequently filled in) and the difficulty in accessing the landfill edge in the area of the existing steep slope along the waterway.

b) Site cross sections, road cross sections, grading plan, erosion & sediment control plans are attached. **Joe, I believe you have these already prepared.** We have not included a landfill section as we do not know the depths of the landfill materials (access difficulties for soils exploration). The area around the site within a 500 foot radius is shown on the plan and is entirely controlled by the Town of Fairfield (transfer station, water pollution control facility, animal shelter, fire training facility, composting facility, DPW yard) and marsh area. We have proposed monitoring well locations but have not installed them as we have not received concurrence from your agency with respect to location. Depths for the wells are proposed to be to 20' below the water table. As the DPW facility was constructed on fill placed over the salt marsh and the unpermitted (and adjacent permitted) landfill consists of municipal solid waste placed within an excavation created when materials were being relocated for fill for other areas of the facility, it is reasonable to assume the groundwater under the property is a mounded water table. This will be confirmed when the monitoring wells are installed.

Berm Wall Configuration

2. Did the Town of Fairfield "the Town" complete a geotechnical investigation to evaluate the properties of the subsurface materials at the site relative to the loading conditions imposed by the construction of the berm? Please provide details of the following:

a. Site and subsurface conditions. The quality of soil such as analysis regarding test pits, test borings, surveys, geotechnical laboratory testing of the impacted soils, slope stability analyses including that of potential soil settlement and associated calculations thereof;

As was indicated above, a subsurface soils investigation was not conducted. The regrading associated with the site reconfiguration involves lowering the existing grades substantially and relocating some of the materials slightly to the south and east to create the berm. This final berm will be lower than existing site grades, and the area behind (to the north of) the berm will be further decreased in height, resulting in a substantial reduction in compression forces over the underlying landfill materials. Final side slope grades will be completed to a 4:1 slope, and materials will be composed of existing site aggregate material and cover materials. The cover materials will be composed of asphalt paving with an associated storm drainage system (behind the berm) and low permeability materials in other locations. Joe, I don't have information on the height of the pile prior to the regrading and berm installation. Can you provide some typical height reduction numbers from information you have or send me a topo drawing with elevations - does Scott (surveyor) have any data? Also, berm slopes - were they constructed to 4:1? Also, what tense do you want to use for the berm construction - do you want to acknowledge that is already in place?

b. Berm design. What is the configuration (i.e., height, length, volume of material, etc.) of the berm? Please provide information regarding the types of materials used in the construction of the berm and analytical results of representative samples of said materials demonstrating that they meet the definition of "clean fill" as defined in Section 22a-209-1 of the Regulations of Connecticut State Agencies (RCSA).

Joe: can Scott provide height/length/volume calculations on the berm

Materials used in the construction of the berm are fine to coarse aggregates consisting of sand, gravel, cobbles, crushed asphalt and Portland cement concrete materials already in place at the site. The mixture of aggregate sizes (non-uniform) and angularity of materials are very stable (as evidenced during the excavation process when relocation soils to construct the berm). Extensive chemical characterization was conducted recently of the soils and these met the criteria set forth in the DEEP Remediation Standards Regulations (RSRs) with respect to the Direct Exposure Criteria (DEC) for industrial/commercial settings, with some exceptions. These included some polynuclear aromatic hydrocarbons (PAHs), including benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and indeno(1,2,3cd)pyrene, which are always found with asphalt materials, and ETPH, normally found with the same materials. Arsenic was found in a small number of the samples at concentrations slightly above the residential and industrial/commercial DEC criteria (both the same at 10 mg/kg, and is not uncommon in naturally occurring soils in the area. This soil was mixed with other clean fill to bring the concentrations below the RSR DEC. Some minor concentrations of PCBs were present in soil samples, and these were below the PCB DEC criterion for industrial/commercial settings. In summary, the site soils being reused for the berm were consistent with the requirements relating to disposal at a landfill and soils reuse criteria. The soils are also to be capped with clean soils meeting the RSR residential DEC standards.

Please describe the geometric configurations and requirements and related calculations that were determined for construction of the berm wall, since varying soil zones in the area can influence its design. Include in your discussion the materials that were included in the making of the berm, foundation, backfill, slope stability, shear strength parameters, etc. and the sedimentation and erosion controls employed to control runoff.

No foundation backfill was emplaced as the berm footprint surfaces were well compacted during the previous usage of the site (compaction by fill piles, operation of heavy equipment during crushing and mixing operations). The berm materials were placed on stable surfaces, compacted (offloaded from dump truck and compacted through passes across surfaces by excavation equipment and trucks), and were placed at stable configurations (maximum 4:1 slope). They were covered with a topsoil mix and seeded, and a stabilizing vegetative cover has already been established.

Erosion and sediment (E&S) control measures included the installation of erosion and sediment control barriers prior to the start of construction, and containing stormwater runoff on-site with berms (sedimentation ponds) prior to being discharged through established outlets. Stormwater tests were conducted, and minor site changes were implemented to provide better suspended solids removal prior to being released from the site. Daily inspections were conducted during stormwater/runoff events to ensure that all E&S controls were properly maintained.

c. Community Outreach. Prior to implementation of the berm wall, was there any local community outreach seeking input from nearby residents?

Extensive community outreach efforts were implemented, including conducting regular public presentations to the community with opportunities for feedback, the establishment of an online information page, detailing the progress of the work and providing inspection and soils testing reports for review. Meetings were also held with DPW site personnel discussing the nature of the work, and presentations were made to Town Commissions during regularly scheduled monthly meetings. The feedback from the various sources guided the changes to the site design that was finally adopted and approved by the Fairfield Planning & Zoning Commission.

Capping of the landfill

3. The application package includes Attachment M - Checklist for Solid Waste Disposal Areas (Landfills). Review staff were not able to find the requisite plan for the closure of the solid waste disposal area as outlined in Condition No. 14 of the referenced checklist. Please provide a plan for the closure of the solid waste disposal area which includes but is not limited to provisions for the grading of slopes, placement of final cover, and stabilization with soils and vegetation to minimize erosion, run-off and infiltration in accordance with the applicable requirements of Section 22a-209 of the RCSA.

Plans are attached to address these requirements. Joe - plans prepared for P&Z?

4. Has the Town evaluated how the capping will be graded? Sec. 22a-209-7 of the RCSA indicates a top slope no greater than four (4) percent and side slopes not to exceed a grade of one (1) on three (3), one vertical on three horizontal, unless otherwise approved as requested. Additionally, the Town will need to comply with the following requirements:

The final grade of the berm side slopes was at a maximum of 4:1. The area behind the berm is proposed to be <4% and will be paved with asphalt and will drain to a detention basin for sediment removal prior to discharging to the existing site discharge point.

a. Protection of ground water monitoring. Where will the monitoring wells be installed to observe any change in groundwater quality?

) The proposed monitoring wells are shown on the attached site plan. They will not be placed directly adjacent to the watercourse, as the existing side slopes preclude access by a drill rig.

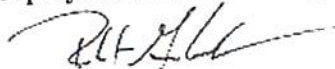
b. Cover Material. Please describe the cover material, whether it be soil (silty gravels, clayey gravels, silty sands, etc.) or some varying synthetic material to be used as final cover.

Cover material will be silty sands or silty gravels, depending on availability.

Should you have any questions regarding the above, please contact me.

Sincerely,

Osprey Environmental Engineering, LLC.



Robert Grabarek, P.E., L.S., LEP
President